FREE SPACE OPTICS

PRESENTED BY,
OVERVIEW

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- HOW FSO WORKS
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- SECURITY
- RELIABILITY
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INTRODUCTION

- Advanced Communication Technology
- Uses Infrared beams for transmission
- Also called Free Space Photonics (FSP)
- Introduced by Alexander Graham Bell
HOW FSO WORKS.............?

- Consists of two Telescopes
- Transmits invisible light beams b/w Telescopes
- Offer capacities in range of 100Mbps to 2.5Gbps
- Can function over distances of several Kms
ADVANTAGES

- Flexible Networking Solution
- Low Cost
- Unlimited Bandwidth
- Possible to mount FSO inside even Buildings
- Only requirement is Line of Sight b/w to ends of the link
CHALLENGES

- Atmosphere Factors
- Physical Obstructions
- Change in pointing stability
- Scintillation
- Solar Interference
SECURITY........

- Laser beams can’t detected with spectrum analyzers or RF meters
- Line of sight cannot be intercepted easily
- Beams are harder to find and crack
- Data can be transmitted over an encrypted connection
RELIABILITY

- Employing adaptive laser power scheme to adjust the laser power will improve reliability.
- TEC Controller that maintains temperature of laser transmitter maximize reliability and lifetime.
CONCLUSION

- Provides low cost, rapidly deployable method of gaining access to fiber optic backbone
- FSO complement legacy network investments
- FSO eliminates the need to obtain costly spectrum licences
REFERENCES

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